



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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January 2, 2002

CERTIFIED RETURN RECEIPT  
7099 3400 0016 8896 4288

Anthony Christofferson  
Geneva Rock Products, Inc.  
P.O. Box 538  
Orem, Utah 84059

Re: Second Review of Notice of Intention to Commence Large Mining Operations, Geneva Rock Products, Inc., Levan Gypsum Mine, M/023/016, Juab County, Utah

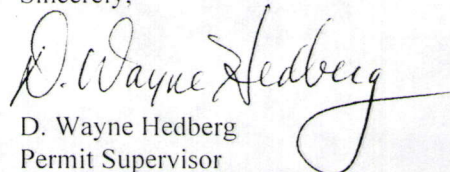
Dear Mr. Christofferson:

The Division has completed a review of your October 31, 2001, response to our January 30, 2001 initial review for your Notice of Intention to Commence Large Mining Operations (LMO) for the Levan Gypsum Mine, located in Juab County, Utah. After reviewing this latest information, the Division has the following comments which will need to be addressed before tentative approval may be granted. The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion.

Italic print denotes our comments to your latest response. Bold and italicized comments will require additional information. **Please address only the items requested in this review. You may send replacement pages to the original notice using redline and strikeout, so we can see what changes have been made. After the notice is accepted, we will then ask that you send us two copies of the complete and corrected plan. Upon approval of the permit, we will return one complete copy of the application stamped "approved" for your records.** Please provide a response to this review by January 31, 2002.

The Division will suspend further review of the Levan Gypsum mine LMO until your response to this letter is received. If you have any questions in this regard please contact me, Lynn Kunzler, Tom Munson or Doug Jensen of the Minerals Staff. If you wish to arrange a meeting to sit down and discuss this review, please contact us at your earliest convenience. Thank you for your cooperation in completing this permitting action.

Sincerely,

  
D. Wayne Hedberg  
Permit Supervisor  
Minerals Regulatory Program

jb

Attachment: Review

cc: Brian McClelland, Price Office, Manti LaSal Forest  
M23-16-levan2.doc

## SECOND REVIEW OF NOTICE OF INTENTION TO COMMENCE LARGE MINING OPERATIONS

Geneva Rock Company  
Levan Gypsum Mine

M/023/016  
December 19, 2001

### ***THE ITALICIZED AND BOLDED COMMENTS NEED TO BE ADDRESSED***

#### **R647-4-105 - Maps, Drawings & Photographs**

##### **105.1 Topographic base map, boundaries, pre-act disturbance**

Please include an overlay of the mine disturbances (existing and proposed) on the base map II-C which includes the surface ownership boundaries. (AG)

*This map was included in the revised plan. Operator's response satisfies the regulatory requirements of this section of the rule. (DJ)*

The disturbed area polygon for the first quarry excavation as shown on map II-E does not agree with the polygon shown on map II-D of the current disturbances. Please explain the reason for this discrepancy, and revise the map(s) if appropriate. (AG)

*Polygons on revised maps now agree. Operator's response satisfies the regulatory requirements of this section of the rule. (DJ)*

##### **105.2 Surface facilities map**

The surface facilities map II-D does not show the surface disturbance due to fill construction of the road through such steep terrain. Please modify the map to show the actual area affected by the access road, or justify why this information is not necessary. (AG)

*The Division agrees that the expense of a survey to ascertain the actual width of the affected area of the access roads would be expensive. As an alternative, multiple transects of the road could be made along the road and used to give an average width of this feature. The transects should be made from the crest of the road cut to the lower edge of the side cast road material. The calculation of the road disturbance using a 25' width accounts only for the road base portion of the road, not the area affected by the road construction. The estimated acreage of the access roads should be adjusted to reflect this adjustment. (DJ)*

Given the steep terrain, it is doubtful that the quarry excavation disturbances will follow the regular geometric shapes as shown on maps II-E, III-B, etc. Please modify these maps to more accurately reflect the current and proposed quarry disturbances, or explain why this is not necessary (i.e., the geometric shapes include an undisturbed buffer zone around the quarry disturbance, etc.). (AG)

*The geometric shapes have been adjusted in the revised plan, but do not necessarily accurately reflect the current and proposed quarry disturbances. Please submit information requested by AG in the initial review. (DJ)*

##### **105.3 Drawings or Cross Sections (slopes, roads, pads, etc.)**

Please modify the reclamation map II-E to reflect any changes made to the other maps in response to the comments under section 105.2 above. (AG)



*The reclamation map has been changed to reflect map changes. Operator's response satisfies the regulatory requirements of this section of the rule. (DJ)*

Please provide cross sections showing the proposed bench and pit floor configurations for the two quarry excavations. This information is needed to evaluate the variance request and safety measures being proposed. (AG)

*A conceptual cross-section of the proposed bench configurations was supplied with the revised plan. Also included with the plan was a "Slope Stability Evaluation" report performed by Applied Geotechnical Engineering Consultants, Inc. The report recommends that the high-wall excavations with an orientation of N40E and N28E will have a 1.7 safety factor if the face of the excavation is sloped back at least 0.2 horizontal to 1 vertical and blast produced fractures can be eliminated. Slope excavations which are oriented in a general perpendicular direction to the high-wall will not have a stable configuration if constructed with a steep face. These excavation slopes should be sloped to a 1.3 horizontal to 1 vertical or flatter to provide a safety factor of at least 1.2. The study recommends that the development of the final rock face be performed using blasting techniques minimizing fracturing rock behind the slope face. A copy of this plan should be included with the final mining plan for this area and a commitment by Geneva Rock to follow the guidelines presented in this report. (DJ)*

#### **R647-4-106 - Operation Plan**

##### **106.3 Estimated acreages disturbed, reclaimed, annually.**

Please explain how the disturbed area of 6.68 acres was calculated for the access/haul roads. The acreage total under this heading in the submission appears to be incorrect. The figures in this listing total 36.80 acres rather than 37.55. Please confirm this acreage. (AG)

*A revised estimated acreage was supplied with the revised plan. Operator's response satisfies the regulatory requirements of this section of the rule. (DJ)*

##### **106.6 Plan for protecting & redepositing soils**

In addition to placing berms around topsoil stock piles, they should also be seeded with a quick cover of grass and legumes unless the soil material will be used for concurrent reclamation during the same year (season) that it is salvaged. Please see attached recommended seed mix for stabilizing topsoil stockpiles. (LK)

*The plan has been modified to include the seeding stockpiled topsoil with an acceptable quick cover seed mix. Operator's response satisfies the regulatory requirements of this section of the rule. (LK)*

The volume of soil to be salvaged and stockpiled is described as being 14,400 cubic yards. Please explain how this volume was calculated using the 16 acre area with soil depths ranging from 10 - 40 inches. The submission states soil materials will be placed at a six inch depth over the areas to be reclaimed. A volume of 14,400 cubic yards will cover approximately 17.8 acres. Please explain this discrepancy between proposed soil replacement depth and soil stockpile volumes. Also, please explain the discrepancy between the production of waste/overburden at

900 cubic yards per year (which includes soil, vegetation and rock debris) and only 14,400 cubic yards of soil materials to be stockpiled and used in reclamation. (AG)

*Please explain how the soil removed from the roadways during construction will be stored on the shoulder of the roadway. (DJ)*

*The revised plan states that a total of 14,400 cy of soil will be salvaged from 16 acres. The area of proposed mining and proposed access road encompasses 24.6 acres. Please explain why the soil from the additional 8.6 acres of disturbance will not be salvaged. (DJ)*

*The plan states that mining at the active and proposed quarry area will produce an additional 900 cy of material that will be used as soil for reclamation of this area. Please explain the discrepancies of the total amount of soil to be salvaged. (DJ)*

*Please indicate on the reclamation map the location of the quarry and access road soil stockpiles. (DJ)*

*Please explain how the soil which will be placed on the shoulders of the roads will be protected from erosion. Also explain how it will be protected during reclamation of the road. (DJ)*

#### **106.9 Location & size of ore, waste, tailings, ponds**

Please show on the appropriate figure the location of berms and the sediment pond used for erosion and sediment control. (TM)

*The response to this request was shown on Figure II-D and III-B. The applicant has shown these items on the figures listed above but has failed to provide enough drainage details to delineate how the drainage will get to the pond, given the scale and lack of topographic detail on these figures. The purpose of requesting this information was to help define the adequacy of the drainage controls for storm water from disturbed areas. Please provide some details of how the drainage will get to the storm water pond by a road side ditch, etc. and show where these structures are located and interconnected. (TM)*

### **R647-4-107 - Operation Practices**

#### **107.1 Public safety & welfare**

##### **107.1.12 Disposal of trash, scrap, debris**

Please describe the location and approximate size of the small bone yard as described under this heading of the submission. Please explain whether this feature was included in the estimated surface disturbance. (AG)

*The maps contained with the revised plan indicates that the bone yard was included in the estimated surface disturbance. Operator's response satisfies the regulatory requirements of this section of the rule. (DJ)*

#### **107.2 Drainages to minimize damage**

The operation plan describes the main drainage being moved to the east, but the grade remaining unchanged under section 110.2. Please provide the location of the rerouted drainage section on a

map and describe what has been done to ensure its stability both during the operation phase and the post-mining phase when the pad will remain. The road to the pit also transects a drainage, therefore, please describe how these sites will be protected during mining and reconstructed following mining. (TM)

*The response in section 107.2 has failed to provide enough details to describe why stabilization mat was chosen to protect the reclaimed section of the disturbed channel and how it would be installed. The Division prefers riprap to stabilization mat as a permanent solution to erosion. A commitment to a good gradation of angular, hard, 6"-24" riprap installed correctly to engineering guidelines would be a more appropriate response to this concern, unless bedrock is exposed in the area of disturbance and no protection is needed. The reclaimed channel must meet the upstream and downstream channel profiles. Please make the appropriate corrections to the plan or provide other alternatives. Also show on a figure what areas will be treated. (TM)*

#### **107.3 Erosion control & sediment control**

The plan talks about a pond on the lower pad and berms at appropriate places. The Division does not feel this is unacceptable, but would like to have the location of these structures shown on a map and a description of the size of the berms in the plan. (TM)

*In concept, the overall plan does not completely and clearly explain how disturbed area drainage will be treated. Although it appears that the drainage will be routed to the sediment pond, it is still unclear how this will be implemented on the ground and what the size of the pond will be. Will it have a protected inlet and outlet or is it sized to handle all storm water from the pad and road prior to discharge? If discharge is expected, then a Discharge Permit is required from the Department of Environmental Quality, Water Quality Division. Please provide more explanation and better drainage details, so the Division can determine that the storm water runoff from disturbed areas is being properly treated. (TM)*

#### **107.4 Deleterious material safely stored or removed**

Please show the location of the two diesel tanks to be kept on site on the surface facilities map(s). Please describe the capacities of these tanks and an estimate of the fuel volumes to be stored on site. Please confirm the existence of a Spill Prevention and Contamination Control Plan for the fuel storage facilities or explain why this is unnecessary. (AG)

*The information request was furnished in the revised plan. The SPCC plan will be developed before mining begins in 2002. Operator's response satisfies the regulatory requirements of this section of the rule. (DJ)*

### **R647-4-109 - Impact Assessment**

#### **109.2 Impacts to threatened & endangered wildlife/habitat**

Please explain why this proposal will not adversely affect the golden eagle nest sites located within 0.5 miles from the site. Please show the locations of these nest sites in respect to the operations on a quad map or map of other suitable scale. (AG)

*A study entitled "A Study of the Golden Eagle Nests near the Levan Gypsum Mine" by Mt. Nebo Scientific, Inc. was included with the revised plan. This report recommended annual monitoring*

*of nest # 1 and 3. The report also recommends further investigation of nest #2 prior to expansion into the proposed mining area.*

***The operator needs to incorporate the recommendations of the eagle nest study into the Notice of Intention. (LK)***

#### **109.4 Slope stability, erosion control, air quality, safety**

Please describe the safety berms to be constructed above the highwalls by providing design drawings or by describing the dimensions (height, width, shape, length) of these berms. Please describe the configuration of the natural slopes adjacent to the quarry excavations. (AG)

***The safety berm construction above the high-walls was not addressed. Please furnish the information requested above. (DJ)***

### **R647-4-110 - Reclamation Plan**

#### **110.1 Concurrent & post mining land use**

Please describe the post reclamation condition of the private property proposed to remain for use as an equestrian staging area and camping. Please describe the acreage of this area and indicate the borders of this post mine land use area on the reclamation map. (AG)

***This information is not furnished in the revised plan, please furnish. (DJ)***

#### **110.2 Roads, highwalls, slopes, drainages, pits, etc., reclaimed**

The submission proposes a variance request to allow quarry highwalls to remain as the final grade for portions of the mine site. The Minerals Rules require all highwalls to be stabilized by backfilling against them or by cutting the wall back to achieve a slope angle of 45 degrees or less. Please refer to section R647-4-113 for additional comments on this highwall variance request. (AG)

***A slope stability evaluation study by Applied Geotechnical Engineering Consultants, Inc. was included in the revised plan. Operator's response satisfies the regulatory requirements of this section of the rule. (DJ)***

Please describe the proposed reclamation treatments for the floors of the two quarry excavations.

Please show the location of the sediment pond which is proposed to remain unreclaimed on the reclamation map. Please describe how soil will be placed on the highwall benches and the method of seeding for these benches. (AG)

***The location of the sediment pond was shown on the maps in the revised plan. (DJ)***

***The reclamation treatments of the two quarry pit floors was not addressed in this section. The method used to place the soil on the benches needs to be addressed. (DJ)***

#### **110.3 Description of facilities to be left (post mining use)**

The NOI states that the pad and access road for material processing and storage will be graded to eliminate any hazards, but will not be reclaimed (assumed revegetated) for possible use as equestrian staging and camping facilities. For areas other than the road, light ripping and seeding should be performed. The Division can consider alternative revegetation success standards for this area. (LK)



*The reclamation plan has been revised to include ripping and seeding of compacted areas on the lower pad. Operator's response satisfies the regulatory requirements of this section of the rule. (LK)*

#### **110.4 Revegetation planting program**

Topsoil from the area is low in organic matter. To increase %OM in the soils. An application of 10 tons/acre of composted manure should be applied. This will also greatly increase the likelihood of revegetation success. (LK)

*The plan has been modified to include the application of 10 tons/acre of composted manure at the time of reclamation. Operator's response satisfies the regulatory requirements of this section of the rule. (LK)*

The NOI identifies that most revegetation will be completed with a hydroseeder, and mixing fibermulch, seed and fertilizer in one application. This needs to be corrected, by eliminating the fertilizer (fertilizer in the solution will kill about 50% of the seed within 20-30 minutes exposure). Also, seed needs to be in contact with the soil. If large amounts of mulch (over 200 lbs/ac.) are used in the slurry, then a majority of the seed will be suspended in the mulch matrix and will likely perish before the seedlings can become established. Please revise the plan to mix only enough mulch with the seed (the mulch is a tracer to identify where seed is applied) and to not use any fertilizer in the seed slurry. If fertilizer is needed, it must be applied separately. (LK)

*The plan has been modified to use only enough mulch as a tracer to assure even coverage with the seed. However, the plan still includes mixing fertilizer with the seed slurry in the hydromulcher. As stated earlier, if fertilizer is needed, it must be applied separately from the seed. Please revise the plan to make this correction. (LK)*

The NOI also states that the seeding rate will be doubled for areas that will be broadcast seeded. With the proposed seeding rate, doubling the seeding rate should not be necessary. (LK)  
*The plan has been modified to indicate that the seeding rate for hydroseeding and broadcast seeding will be the same. Operator's response satisfies the regulatory requirements of this section of the rule. (LK)*

### **R647-4-111 - Reclamation Practices**

#### **111.1 Public safety & welfare**

##### **1.12 Disposal of trash & debris**

Please confirm that all parts and equipment in the boneyard will be removed from the site as part of final reclamation and no debris will be buried on site. (AG)

*The revised plan states that no equipment or debris will be buried on site. Operator's response satisfies the regulatory requirements of this section of the rule. (DJ)*

##### **111.2 Reclamation of natural channels**

See comments under R647-4-107.2.

**See response under 107.2 for additional information needed to complete the permit. (TM)**

**111.7 Highwalls stabilized at 45 degrees or less**

Please refer to comments under R647-4-113 for the highwall variance request. (AG)

**Please see the comments found under R647-4-112. (DJ)**

**111.9 Dams & impoundments left self draining & stable**

*If the pond and pad will remain in place following reclamation of the mine, please describe how it will be maintained and who will assume responsibility. A variance to this section will need to be requested under R647-4-112.*

The revised plan states that the pond will be reclaimed. Operator's response satisfies the regulatory requirements of this section of the rule. (TM)

**R647-4-112 - Variance**

The submission requests a variance to R647-4-111.7 to allow leaving the excavation highwalls at final grade with 40 foot vertical walls between 20 foot wide benches. The benches (shelves) are proposed to be covered with six inches of soil materials and seeded. Please describe the overall slope angle for the highwall configuration proposed by providing the cross sections requested in R647-4-105.3. Please provide information to demonstrate the safety and stability of the proposed highwall configurations or explain why these issues are not significant. This information may include stability calculations, geologic information, and historic or empirical data. Please describe any measures which will ensure public safety in these highwall areas after final reclamation (i.e., berms, signs, fencing, restricted access, etc.). (AG)

*The information requested on the safety and stability of the highwall have been included in the revised plan in the form of a report from Applied Geotechnical Engineering Consultants, Inc. This report entitled Slope Stability Evaluation of the Geneva Rock Gypsum Quarry researched the stability of the highwall that will be left standing at .7:1. To assure long-term stability Applied Geotechnical offered several parameters that will be necessary.*

*Among the recommendations:*

- 1. Based on site conditions the two highwall excavation slopes with orientation of N40E will have a safety factor of 1.7 for the proposed 40' X 20' wide benches if the face of the excavation is sloped back to at least 0.2:1 and the blast produced fractures can be eliminated.*
- 2. Excavation slope which would be oriented in a general perpendicular direction to the highwall excavation with orientation of N46W will not have a stable configuration with aspect to rock discontinuities if constructed with a steep face. The excavation should be sloped to 1.3:1 or flatter, to provide a safety factor against slope failure of at least 1.2.*
- 3. Development of the final rock face should be performed using blasting techniques which minimize fracturing of the rock behind the slope face. Consideration may be given to using special blasting techniques such as buffer blasting, presplit blasting and smoothwall blasting. Care should be taken not to use excessively high blast energies which would result in fracturing of the rock face to remain.*



*The variance request to leave the highwalls at a >45 degree slope can be granted if Geneva Rock submits a plan which commits to the stipulations for slope stability set forth in the Applied Geotechnical report. (DJ)*

*A description of how the six inches of soil, that Geneva has committed to placing on the highwall benches, will be applied and seeded needs to be included in the plan. (DJ)*

*Measures to insure public safety in the highwall areas needs to be included in the plan. (DJ)*

*The operator has requested a variance to the pad area based on a future land use of an equestrian park and camping area. The Division cannot grant this Variance until we are assured that the proposal will actually occur upon final reclamation. Please calculate full pad reclamation costs in your bond estimate at this time. (TM)*

**R647-4-113 - Surety**

The reclamation surety proposed in the submission totals \$192,027 dollars. While this amount appears to be adequate for reclamation of the 36.80 acres to be disturbed, the Division will need the information requested in this review to determine if this proposed surety amount is adequate. (AG)

*The surety included with the revised plan appears to be insufficient to reclaim the site in the manner described. The surety contained in the original NOI indicated a cost of \$192,027 to reclaim 36.80 acres, the revised plan disturbs an additional 6.05 acres and the surety calculation is reduced to \$140,917. Please explain. (DJ)*

*Because soil will be placed on the reclaimed access road areas, an activity should be shown on the surety noting the cost and method of the placement. (DJ)*

*The amount of topsoil replacement shown in the surety is insufficient to cover the 31.35 acres of mining areas with 6 inches of soil. The 6,000 cy of soil that is scheduled to be moved by loader and truck, will still have to be spread after it has been moved to the area on which it will be spread. Depending on the location of the topsoil piles, the amount of material that will have to be placed by hauling may increase. (DJ)*

*The revised plan indicates the realignment of the proposed access road will disturb a total of 2.0 acres. A measurement of the proposed access road indicates this feature is ~3550' in length. A calculation of the length and area indicates that the proposed road will be 24.5' in width. The area of the road should reflect the extent of the area to be affected by this feature. (DJ)*

**R647-4-115 - Confidential Information**

Nothing was labeled as confidential